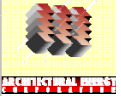


Commercial Green Buildings and Above Code Programs – What's New



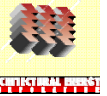
Courtney France, LEED AP
[Architectural Energy Corporation](#)



Agenda

- Introduction to Architectural Energy Corporation
- Environmental Impact of Buildings - Statistics
- Defining Sustainability
- Overview of the:
 - U.S. Green Building Council
 - LEED Rating System
- LEED Certification Process
- LEED Market Transformation
- LEED Referenced Standards
- LEED – as a ‘Green Building Standard’?





Architectural Energy Corporation

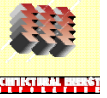
- Founded in 1982
- 85+ person energy and environmental research and design consulting firm
- Offices in Boulder, San Francisco, Chicago and Nashville

LEED Certification Services:

- LEED Certification Process Management
- LEED Construction Support
- LEED AP Training
- LEED Related Energy Analysis
- LEED Related Commissioning
- LEED Related M&V

Mission Statement:

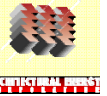
Assist our clients transition to a sustainable economy by improving the energy efficiency, and the use of renewable energy technologies and low environmental impact materials and practices in their existing and new buildings.



Environmental Impact of Buildings*

- 39% of total U.S. primary energy use ¹
- 70% of total U.S. electricity consumption ²
- 30% of total U.S. greenhouse gas emissions ³
- 136 million tons of construction and demolition waste in the U.S. (approx. 2.8 lbs/person/day) ⁴
- 12% of potable water in the U.S. ⁵
- 40% (3 billion tons annually) of raw materials use globally ⁶

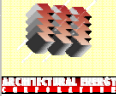
* Commercial and residential



What is Sustainable Design?

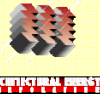
An action or thing that does not impair the ability of future generations to achieve and enjoy a way of life comparable to our own.

~United Nations



Sustainable Design – Defined by ASTM

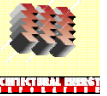
A building that achieves the specified building performance requirements while minimizing disturbance to and improving the functioning of local, regional and global ecosystems both during and after its construction and specified service life.



Sustainable Design -- AIA Position

“To acknowledge Sustainable Design as the basis of quality design and responsible practice for AIA architects, and therefore to integrate Sustainable Design into AIA practices and procedures.”

~ 2000 AIA Convention Resolution



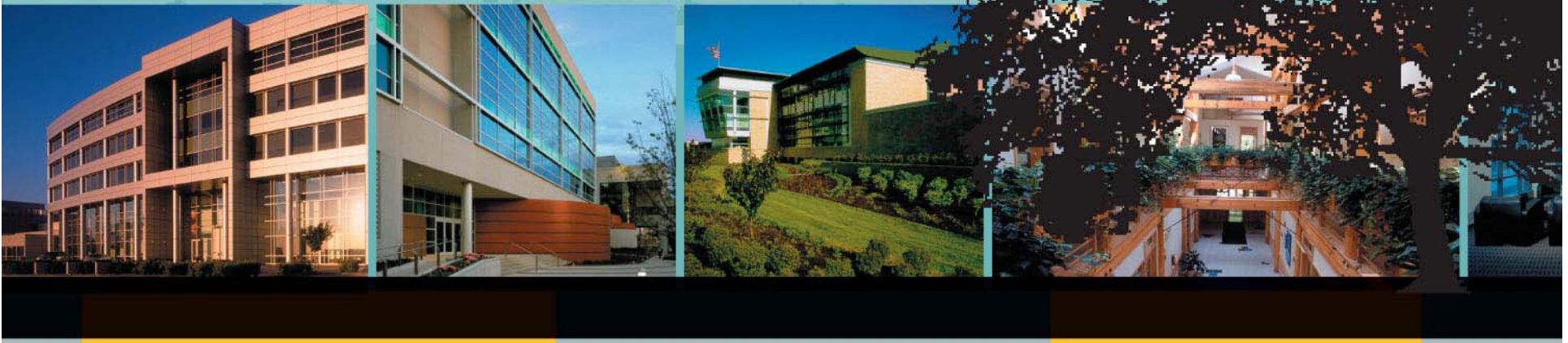
In Theory...

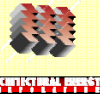
A sustainable building would be one **constructed** completely with environmentally benign materials, components, and systems; would **operate** without adverse environmental impact; would rely completely on **renewable energy** sources for its energy requirements; and when its useful life is over, would be **"deconstructed"** with all its materials, components, and systems to be reused or recycled.

U.S. GREEN BUILDING COUNCIL

USGBC's MISSION:

to promote the design and construction of buildings that are environmentally responsible, profitable, and healthy places to live and work.





USGBC is...

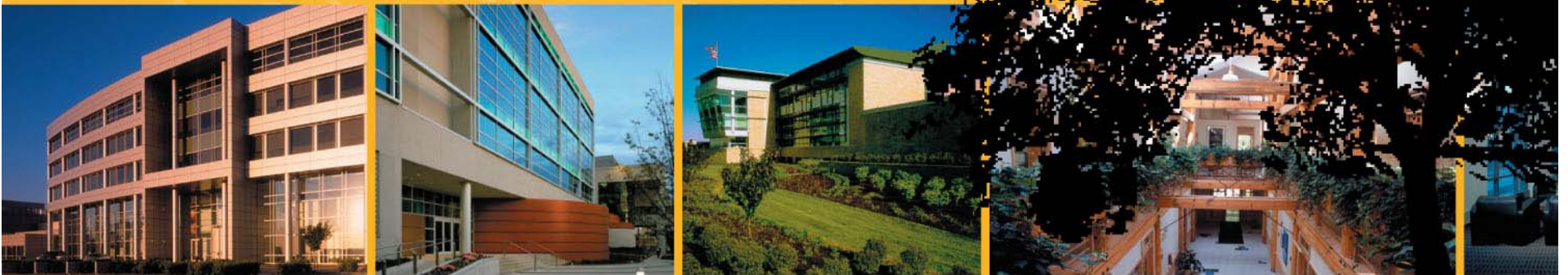


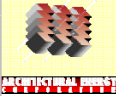
- Founded in 1993
- National nonprofit organization based in Washington, DC
- Diverse membership of organizations
- Consensus-driven
- Committee-based product development
- Over 6,300 national members (representing more than 1000% growth in the past four years alone)
- Over sixty local chapter organizations
- Developer and administrator of the LEED® Green Building Rating System



Leadership in Energy & Environmental Design®

A leading-edge system for
designing, constructing,
operating and certifying the
world's greenest buildings.





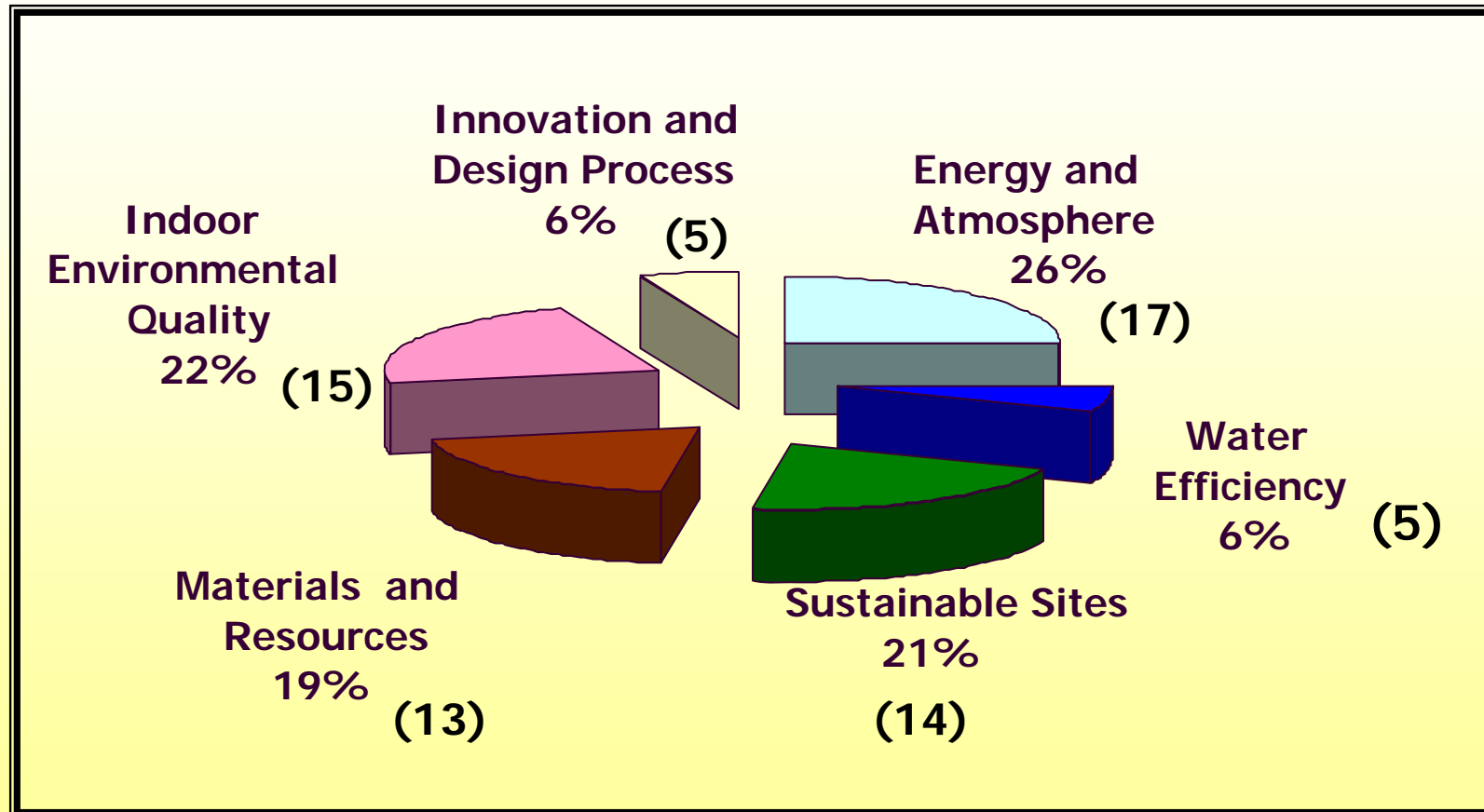
Why Was LEED™ Created?

- ♦ Facilitate **positive results** for the environment, occupant health and financial return
- ♦ **Educate** building industry and **establish design guidelines** for what constitutes sustainable design practices in the U.S.
- ♦ **Define “green”** by providing a standard for measurement
- ♦ **Prevent “greenwashing”** (false or exaggerated claims)
- ♦ Recognize **leaders**
- ♦ Stimulate **green competition**
- ♦ Raise **consumer awareness**
- ♦ **Transform the marketplace!**

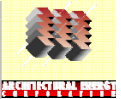




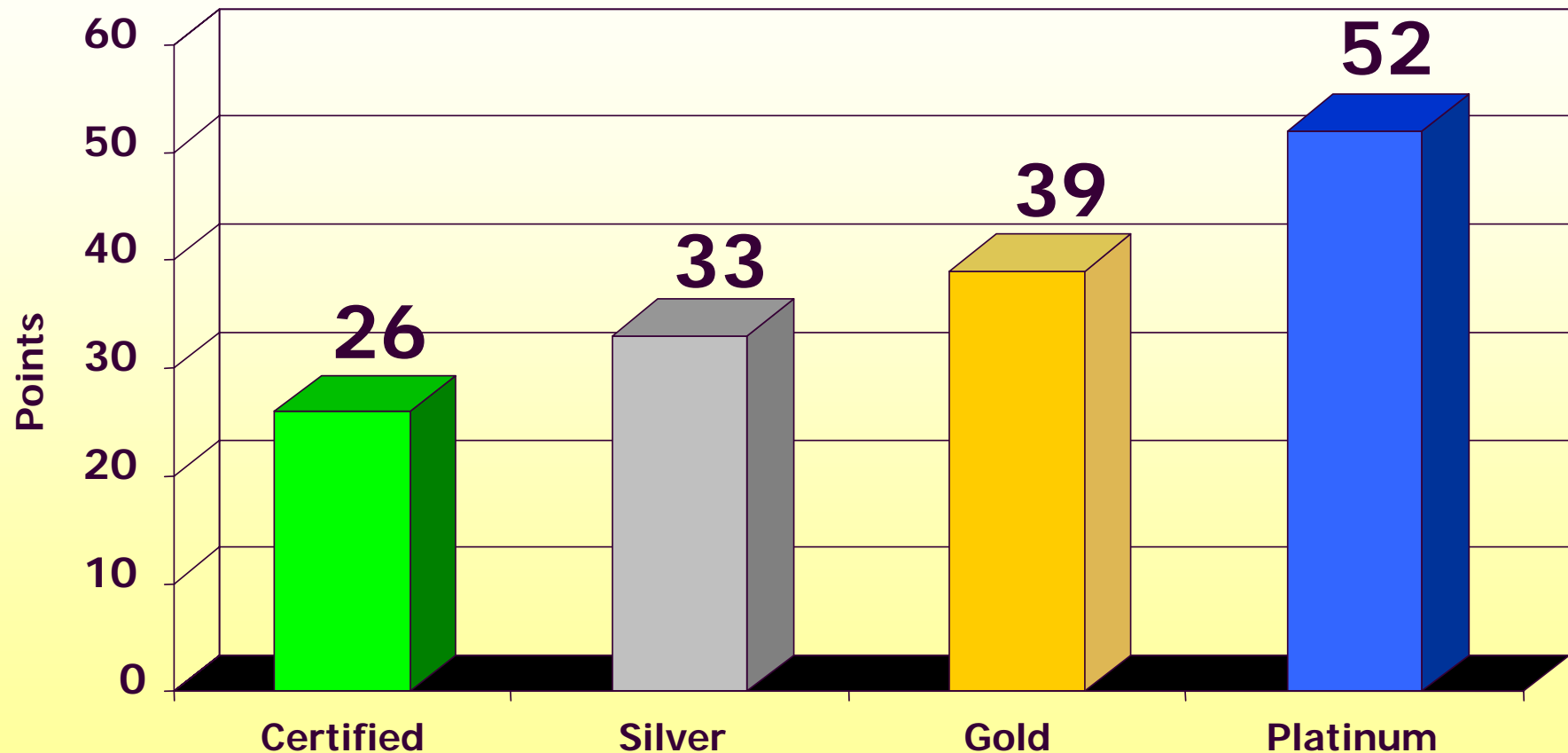
LEED-NC Rating Categories



LEED™ categories as % of total points (69)



















































LEED-NC Certification Levels




LEED-NC: 7 prerequisites and 69 total points





LEED Sample Scorecard


			Project Points	Possible Points	Credit Category	Credit Title
Sustainable Sites						
			0	0	Prerequisite 1	Erosion and Sedimentation Control
			0	1	Credit 1	Site Selection
			1	1	Credit 2	Urban Redevelopment
			0	1	Credit 3	Brownfield Redevelopment
			1	1	Credit 4.1	Alternative Transportation, Locate Near Public Transportation
			1	1	Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms
			0	1	Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations
			0	1	Credit 4.4	Alternative Transportation, Minimum or No New Parking
			0	1	Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space
			0	1	Credit 5.2	Reduced Site Disturbance, Reduce Footprint & Increase Open Space
			1	1	Credit 6.1	
			1	1	Credit 6.2	
			1	1	Credit 7.1	
			1	1	Credit 7.2	
			1	1	Credit 8	
	2	4	8	14	Subtotal - Sustainable Sites	

LEED GREEN BUILDING CERTIFICATION LEVELS

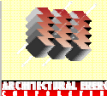
 = 26 - 32 **LEED CERTIFIED**

 = 33 - 38 **LEED CERTIFIED SILVER LEVEL**

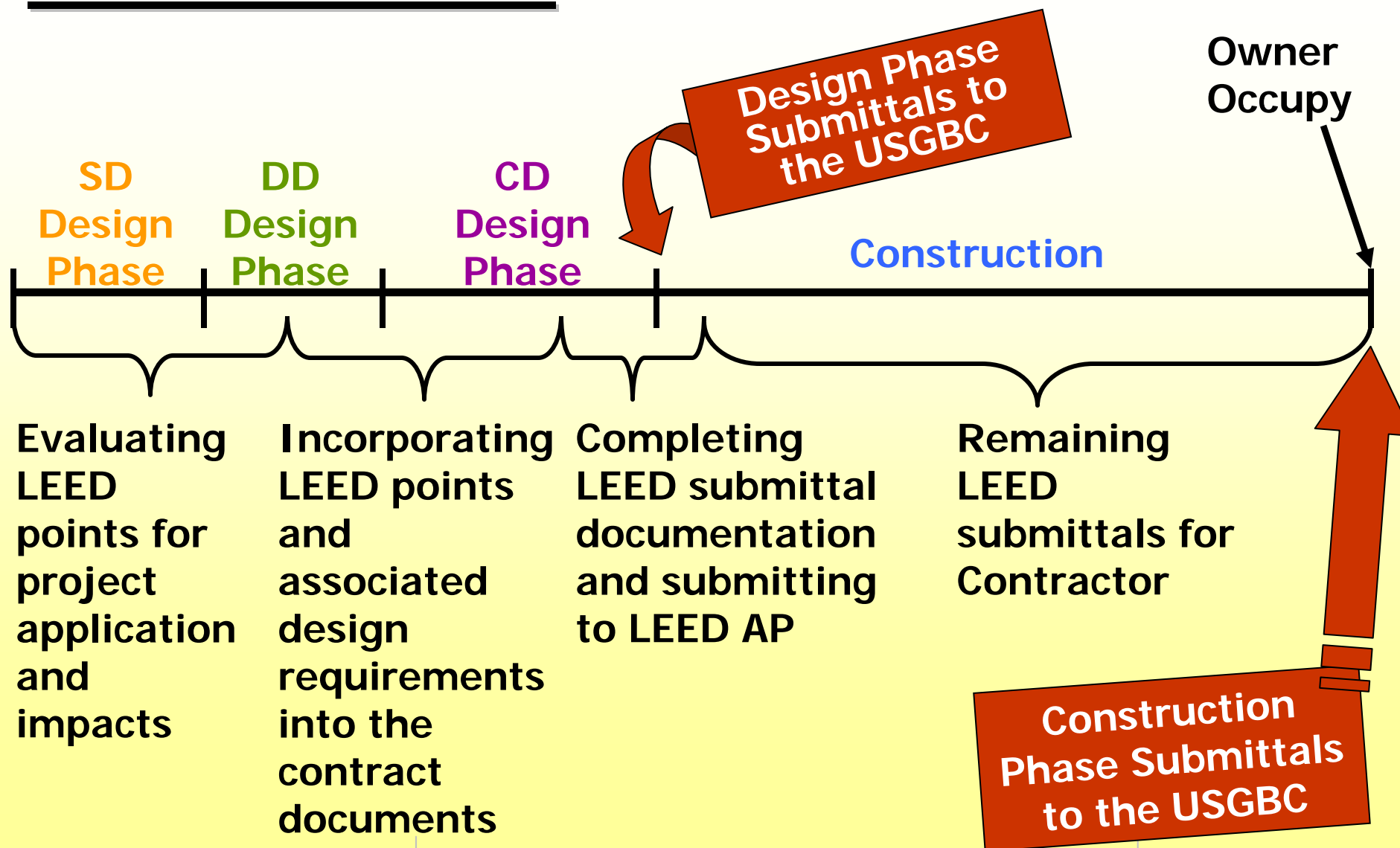
 = 39 - 51 **LEED CERTIFIED GOLD LEVEL**

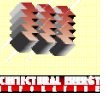
 = 52 + **LEED CERTIFIED PLATINUM LEVEL**

Architectural Energy Corporation



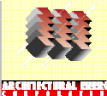
LEED Schedule





LEED Certification Application – The Old Paradigm





LEED Certification – The New On-Line Platform!



<http://leedonline.usgbc.org/Login.aspx>

Welcome to LEED-Online

The login below is designed to allow Project Administrators and Team Members access to the LEED-Online.

- ♦ If you are a Project Administrator, please login below to manage the entire Project Certification process.
- ♦ If you are a Project Team member, please be sure your Project Administrator has assigned you to your project; then login below to manage credits which are assigned to you.

LOGIN

LEED-Online uses the same login as the USGBC Web site. If you experience problems logging in, please contact leedinfo@usgbc.org.

Email Address:

Password:

Login

Forgot password?
[Click here](#)

DON'T HAVE AN ACCOUNT?

Register a new account with USGBC.

A USGBC Web Site username and password is required to access LEED-Online. Additionally, your Project Administrator must add you to a valid LEED Project.

[Register a New Account](#)

LEARN MORE ABOUT LEED RATING SYSTEMS

LEED-NC

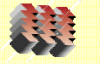
LEED-EB

LEED-CI

LEED-CS

LEED-H

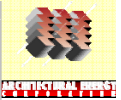
LEED-ND



LEED™ Versions

- LEED - NC v2.2 : New Construction & Major Renovations
- LEED - EB: Existing Buildings
- LEED - CI: Commercial Interiors
- LEED - CS: Core & Shell
- LEED - ND: Neighborhood Development
- LEED - H: Homes
- LEED for Retail Application Guide Draft
- LEED for Campus Application Guide Draft
- LEED for Labs Application Guide Draft (EPA's Labs 21)
- LEED for Lodging
- LEEDv3.0 - 2006 and beyond? LCA?

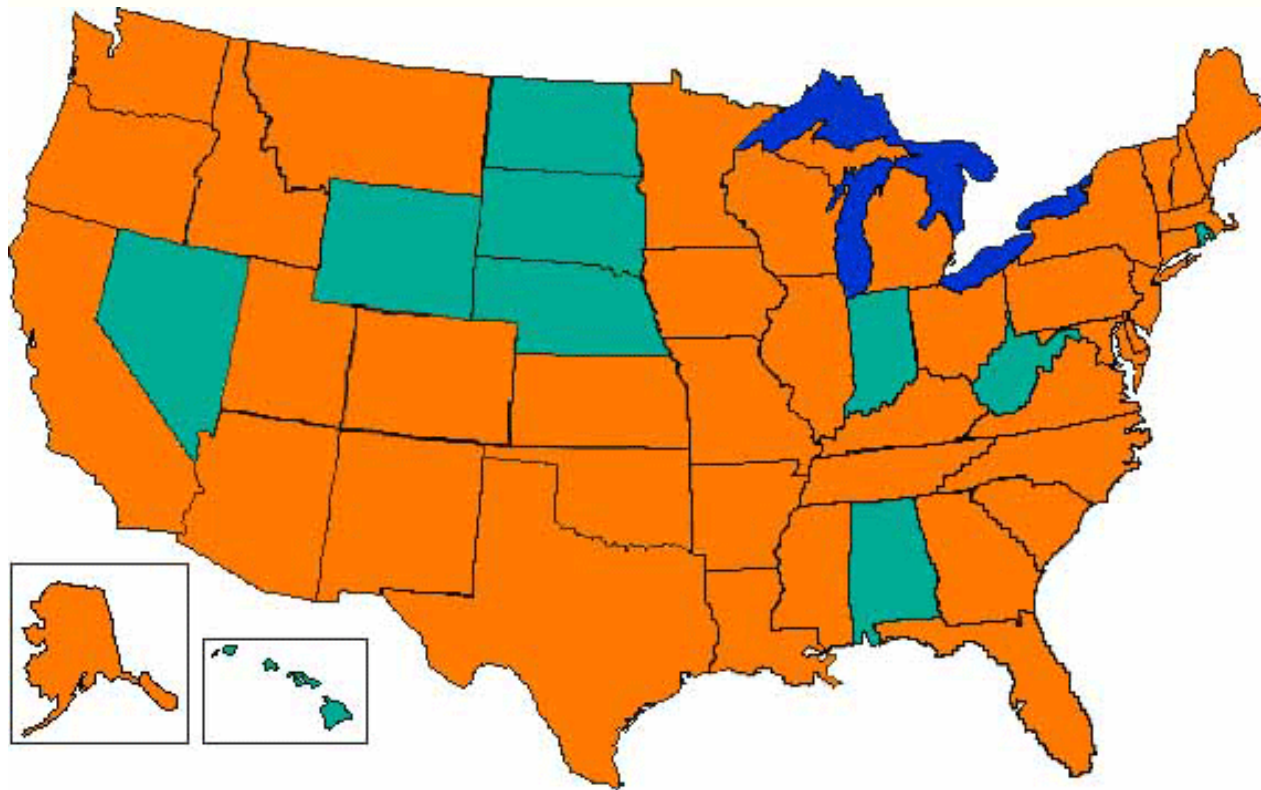




LEED-NC®

Market Transformation

**Over 24,000
LEED Accredited
Professionals!**



- 403 Certified Projects
- 3,113 Registered Projects

563 M gsf

50 States

12 Countries

All statistics exclude pilot projects

As of 6.1.06

State Initiatives

- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Florida
- Illinois
- Maine
- Maryland
- Massachusetts

Resolution No.50

Submitted By:

The Honorable Martin Chavez
Mayor of Albuquerque

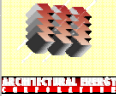
The Honorable Greg Nickels
Mayor of Seattle

The Honorable Richard M. Daley
Mayor of Chicago

The Honorable Manuel A. Diaz
Mayor of Miami

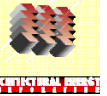
ADOPTING THE "2030 CHALLENGE" FOR CITY BUILDINGS

1. **WHEREAS**, the U.S. Conference of Mayors has previously adopted strong policy resolutions for cities, communities, and the federal government actions to reduce fossil fuel warming...



Federal Initiatives

- Dept. of Agriculture
Forest Services
- Dept. of Energy
- Dept. of Interior
- Dept. of State
- Environmental Protection
Agency (EPA)
- General Services
Administration (GSA)
- U.S. Air Force
- U.S. Army
- U.S. Navy

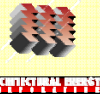


Global Use of LEED

- Australia
- Canada* ~
- China*
- France
- Hong Kong
- India* ~
- Curacao*
- Japan*
- Spain*
- Mexico*
- Italy*
- Guatemala*
- Cote d'Ivoire*
- Chile

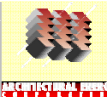
**LEED Registered Projects
in 24 Countries!**

*Registered Projects
~Certified Projects



School Initiatives

- Arizona State University
- Bowdoin College
- Brown University
- Carnegie Mellon
- Clemson University
- Connecticut College
- Dartmouth College
- Duke University
- Emory University
- George Institute of Technology
- Harvard University
- Lewis and Clark College
- Mass. Institute of Technology
- Maryland Public Schools
- New Jersey Public Schools
- Northwestern University
- Omaha Metro Community College
- Pennsylvania Public Schools
- Pitzer College
- Pomona College
- Princeton University
- Santa Clara University
- State University of New York
- University of CA
- University of Cincinnati
- University of Florida
- University of NC – Chapel Hill
- University of Oregon
- University of South Carolina
- University of Vermont
- University of Washington



State Executive Orders

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

Governor Signs
Green Building
Executive Order

By
Apr 13, 2006, 10:20

[Email this article](#)
[Printer friendly page](#)

Executive Order

TE OPERATIONS

to meet their own ne

D 005 05

EXECUTIVE ORDER GREENING OF STATE GOVERNMENT

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Owens, Governor of the State of Colorado, hereby issue this Executive Order concerning enhancing the efficiency and greening of state government.

1. Background and Need

State government needs to operate as efficiently as possible, but at the same time it is important to set an example through efforts to reduce the use of limited resources, increase the cost-effectiveness of state government, and improve Colorado's environment and the health of our children and future generations. Accordingly, the State of Colorado is committed to business practices that contribute to the mutually compatible goals of economic vitality, a healthy environment and strong communities.

The State has already taken significant steps in this direction, particularly under Executive Order D 014 03, Energy Performance Contracting to Improve State Facilities. The Department of Corrections through its Energy Management Program avoids \$1.8 million in annual costs (10 percent of its utility budget) and is planning additional facility improvements that could result in

Bill Richardson
Governor

STATE OF

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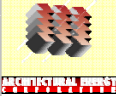
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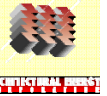
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LEED Referenced Standards

- ASHRAE
- IESNA
- EPA
- ANSI / ASTM
- EPA Act 1992
- South Coast Rule #1168
- Green Seal
- SMACNA
- IPMVP
- Green-e Certification
- ISO 14021-1999
- FSC Certification
- CRI Green Label

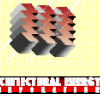




LEED - ASHRAE - IESNA

Standard 189

- Minimum standard for high performance green building
- Applies to new commercial buildings and major renovation projects
- ANSI-accredited standard
- Expected release - 2007
- Can be incorporated into building code!



Questions?

Thank you for your time!

Courtney France, LEED AP
LEED Services
Architectural Energy Corporation
303.444.4149
cfrance@archenergy.com

